November 30, 1994
15621 SE 26th Street
Bellevue, WA 98008

Dear Friends:

Mea Culpa. I noticed after I sent out #10 that I spelled "McElroy" as "MacElroy"! Ted is probably spinning in his grave....

I have been working for the last year on a history of keyers and paddles, and I have so much information that I will have to serialize it in several issues. I consider a "Keyer" to be a mechanical or electrical keying device that is manipulated to send Morse code. The Autoplex meets this definition, but I will skip it since it has been covered in other publications.

Most early keyers started out as homebrew creations and were written up in ham magazines of the day. Some went into production. The earliest keyer that I can find that meets this definition is the Moto-Key, manufactured by Howard Mason of Seattle, Washington. The only mention of it was in an April, 1939 QST article:

NEW APPARATUS
New Keying Device

> *Dashes, as well as dots are formed automatically by the Moto-Key, a new keying device which fits in between the semi-automatic key or "bug" and the fully automatic tape transmitter.*
>
> *The Moto-key mechanism includes a 110-volt ac induction motor which is geared through suitable speed-changing cones to a spindle carrying two pairs of friction discs. Associated with these discs or clutches are two cams, one for sending dots and spaces and one for sending dashes and spaces. One or the other of these cams is released to revolve by pressing the operating lever to the left or to the right. Either cam will continue to revolve and repeat its proper-length dots or dashes and spaces so long as the lever is held over and will continue to revolve to complete its cycle after the lever has been released. An interlock prevents one cam from releasing until the other has finished its cycle.*
>
> *It is not necessary to hold the lever over for the entire duration of a dot or dash; an instantaneous contact will release either. The human element enters only in spacing. While it is impossible to run characters together by cutting spaces too short, the space length in other respects are controlled by the operator. Speed is at an enforced even rate adjustable from approximately 18 to 40 words per minute.*

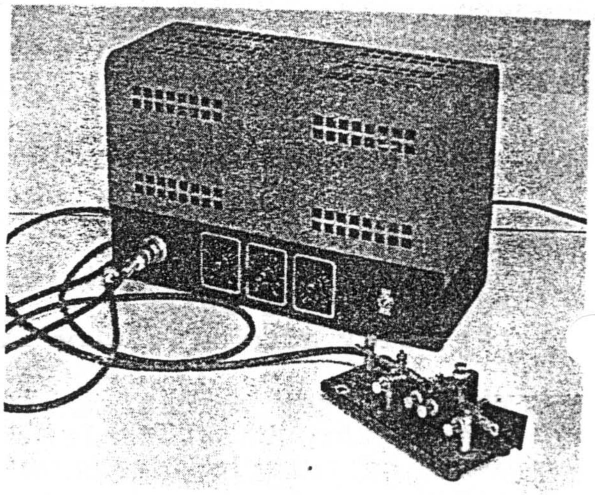
At the time of production Mason was employed by the Puget sound Naval Shipyard in Bremerton, Washington. He designed and built the Moto-Key at his home. The aluminum base was cast at a foundry in Ballard, Washington, and he did all of the machine work on the rest of the key. He purchased the gears from the Boston Key company.

To say that Howard Mason led an interesting life would be a gro understatement! He was born in Indiana, and after the death of his fathe his family moved to Eagle Harbor, Washington when he was five years old. He had an early interest in radio and was licensed as an amateur radio operator [7BK] in 1917. In the early 1920's he worked on the American Radio Relay League Staff, and knew Hiram Percy Maxim.

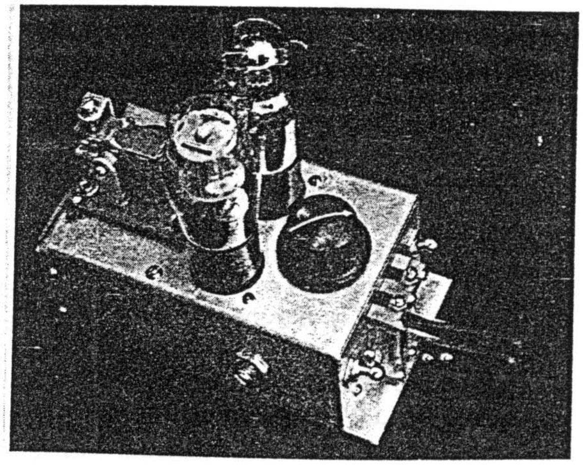
Mr. Mason served as a radio operator in the 1927 Detroit News Arctic Expedition in 1927. During this expedition he operated station KFZG from Barrow, Alaska in support of Arctic overflights. [See: "An Arctic Adventure", by Howard F. Mason, QST, October, 1927]

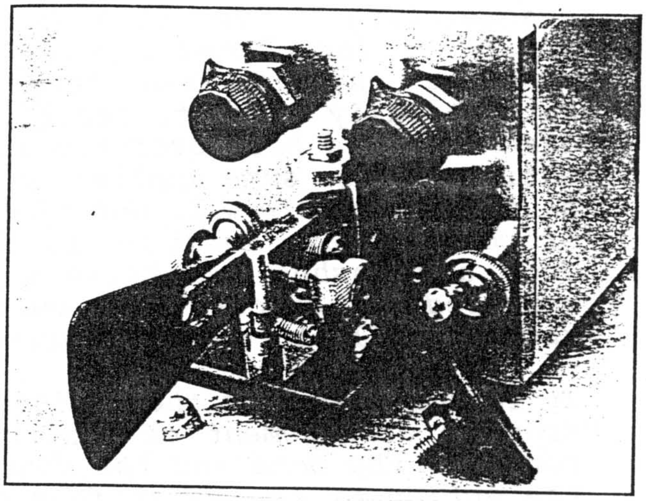
He also served with Richard Byrd as one of five radio operators in the 1928-1930 "Little America" Antarctic expedition. [See: "Radio On The Byrd Expedition", QST, December, 1928]

W2ILE keyer. Harry Beecher, W2ILE, in the April, 1940 issue of QST, wrote the first article about a genuine electronic keyer that I can locate. This keyer is shown on the cover of this issue. It used an 855 gas triode and "sent perfect code at speeds from 15 to 40 words per minute." Beecher used a bug [it looks like a Speed-X] for paddles. The keyer appears to be approximately 12" wide, 10" deep, and 12" high.

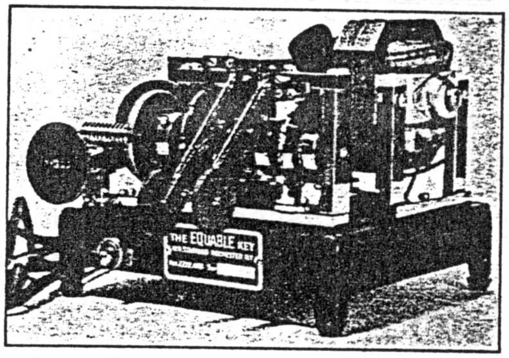


The **W1DF keyer,** designed by George Grammer, W1DF, immediately improved on the W2ILE design. The W1DF keyer was featured in the May, 1940 issue of QST, and appeared on the cover. The W1DF keyer is much smaller than the W2ILE keyer and Grammer simplified the circuitry by removing the dot length control. He also added a switch to eliminate the automatic dash feature, thus allowing it to simulate a bug.





W6UMZ keyer. J.W. Stuerhoff, W6UMZ, provided plans for a keyer in the January, 1942 issue of Radio magazine. The key lever mechanism was home-made though he used a pair of Speed-X contacts. This keyer made both dots and dashes, though it could be set for "bug" mode with automatic dots and manual dashes. It used a single 117L7GT tube and used 110 VAC as a power source.



A motor-driven key making both automatic dots and dashes. The knob at the left controls the speed.

The March, 1942 issue of QST showed the **Equable key,** manufactured by W.R. Starkins of Rochester, New York. The Equable was motor driven and provided automatic dots and dashes. It weighed 10 pounds! The QST review stated:

The shaft of the small motor is connected to a speed-reduction gear box. On the reduced-speed shaft of the gear box is mounted a friction disc which drives a shaft carrying the keying wheels. The keying wheels are somewhat similar to those used on the old Omnigraph code-practice machines. One wheel has projections in its periphery corresponding to dots, while those in the other wheel correspond to dashes. Both wheels are friction mounted on the shaft; under relatively light pressure, they will turn with the shaft, but under heavier pressure, they will not turn with the shaft. The character projections on the wheels make contact with stationary brushes at the rear by which the keyed circuit is opened and closed.

The controls, which correspond to the paddle on the usual type of semi-automatic key is a double lever affair. Each of these levers actuates a ratchet which serves to prevent the disc turning whenever pressure on the control lever is released. One section of the double control lever controls dots, while the other controls dashes. Speed is controlled by changing the speed of rotation of the shaft carrying the character discs by means of the variable-ratio friction drive. The speed may be adjusted over an exceptionally wide range (5 to 45 wpm or better) by the simple twist of a speed control knob which changes the ratio of the friction drive.

As in the case of other devices for both automatic dots and dashes, proper operation of the motor-driven key requires that the average "bug" operator give up some of his bad habits. An individual "swing" simply can't be imposed upon a key of this type. This is particularly true of the habit of *exaggerating the length of dots. With this key, a dash can be neither cut short nor lengthened for the speed for which it is set. An undertimed pressure on the dash lever will do no harm, since the dash will automatically complete itself, once it has been started. However, if the dash lever is held over too long, another dash will be transmitted in its entirety. The same applies to dots, of course, although most operators will have less trouble with dot timing than with dash timing. The operator does, of course, have latitude in forming the spacing when alternating between dots and dashes and between letters and words but the enforced rhythm required to execute the correct number of dots and dashes will tend automatically to develop correct spacing habits.*

It is the belief of the designer that greater speed and less fatigue result from an arrangement of control in which the forefinger or middle finger controls the dots and the thumb controls the dashes. This is opposite to the action of the usual form of "bug" and the reason given is that it is possible to move the finger four to five times faster than the thumb. However, the Equable key may be obtained with dot controls for either thumb or finger, as desired. The Unit is very quiet in operation, since all vibration has been cushioned. It weighs approximately 10 pounds, so that it will not slide over the operating table while in use."

In future issues I will discuss keyers and paddles up through the 1980's. If any of you have information on them please send it to me for inclusion.

Wyn Davies:

Wyn identified several errors in Ingram's book Keys, Keys, Keys:

- *The British "lifeboat" key shown on page 65 [figure 6-3] was used on British and Australian army man packs, not lifeboats.*

- *The Marconi 365 [page 47] never had a marble base; they were bakelite on painted brass.*

- *The key shown on page 54, figure 4-18 was never made in the Netherlands, it originated with the Great Northern Telegraph works of Copenhagen, Denmark. It is a model ME 605 and GNT sold out that portion of their business to a company from Tring, Hertfordshire, England who after a number of changes operate under the name of Sedgewall, Ltd. The keys sell for £126.*

Wyn referred me to The AWA Review, Volume 8 to identify several of the keys that I have recently enquired about. I had missed this issue, so I immediately ordered it. It contains an excellent article on military keys by Louis Meulstee, PAOPCR that enabled me to identify several of my keys, including a "Key and T-R switch box" made for the Marine Corps portable VHF transceiver that I recently picked up. In keyletter #10 I showed a drawing of a "elbow key" that turns out to be part of an early British "Power Buzzer" set.

I have sent Louis a complete set of Keyletters, and hope that he can give us a hand on key identification.

Henry Engstrom sent a photocopy of a picture of a WW II Repeater TG-30 with a straight key on it. It is a typical steel lever straight key mounted on a hard rubber base and is easily removable. It has no other nomenclature other that the identifier "D-165581" in orange on the bottom. There is no "J" number.

Russ Kleinman wrote to give me his new address:

Russ Kleinman
1513 Combs Circle
Silver City, NM 88061

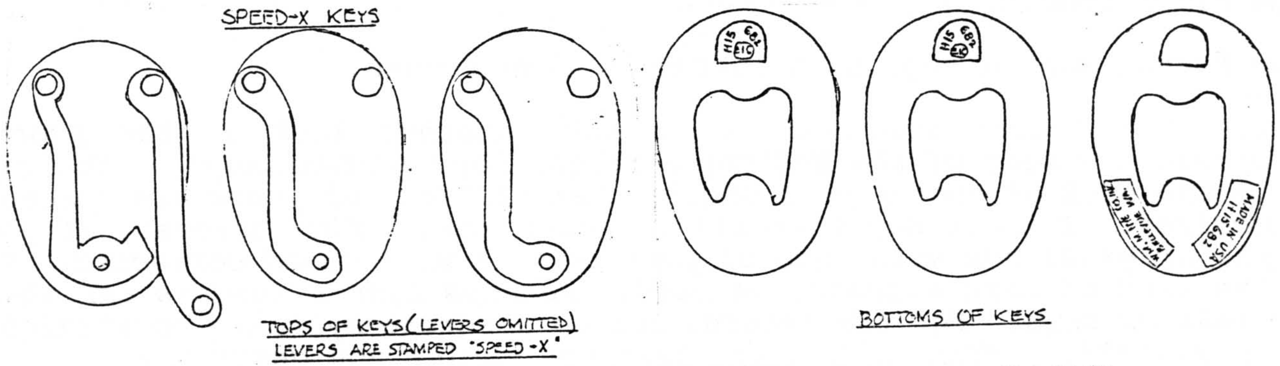
I wrote to **Joe Jacobs** to ask if the JHB commemorative miniature keys and sounders were identifiable as new production. He replied that they will be gold plated and will have serial numbers which will differentiate them from the older models.

Tom French sent a copy of a letter to Dave Pennes:

> *....Your letter reminded me to take another look at the photos you previously sent of the McElroy straight keys (Stream Keys). You say that on the back of one of your photos that all four of yours are "presumably" McElroy. I would say that all of yours are by TAC, however, if you have the original box with some of your keys, I will stand corrected. That is the kind of hard evidence we need. Perhaps Lynn's readers can shed some light on this. For the record, let me describe my teardrop straight keys (post-1938). None of my keys have the emblem you describe:*
>
> - *Black crackle with the bulge on the lever; it has a hole in the arm, but no pigtail. The base is pot metal.*
> - *Black crackle with the slim (no bulge) lever. The hole in the arm contains a rivet and ground pigtail. The base is cast iron.*
> - *Three chrome keys, a BS-300 and two BB-300s. All have the slim lever, with the rivet. All were cast iron.*
>
> *I note that all of your keys have the bulge in the lever. None have a ground pigtail (although one has the hole). All are short-arm lever style (referring to the width of the lever arms) between the pivot screws; the pivot lends of the lever are turned down as on a lathe where they meet the screw). My black, pot metal key with the bulge on the lever also has these features.*
>
> *On the other hand, all of my other keys described above have a long-arm lever style (the ends are not turned, and the pivot screws are shorter), a slim lever, and a ground pigtail. Perhaps any one of these features can differentiate the McElroy from the TAC. It's worth investigating.*
>
> *As a point of information, is your black key with the hole in the lever (no pigtail) cast iron or pot metal? I believe we will find these both ways. The pot-metal jobs may be crude TACs or later rip-offs.*

Murray Willer:

Your Keyletter #10 contained my comments on a Speed-X key with the initials "EIC" on the back. John Elwood sent me a note saying he had a couple of Speed-X keys with the same initials on the back. This made me do a little more searching, and I located three Speed-X keys which have some interesting information on the back. There is a U-shaped indentation on the bottom of all three keys. On the first two keys, the indentation shows "H15 68983" and the letters "EIC", or what looks like "EIC." The third key doesn't have anything in the indentation but on the lower portion of the bottom it shows "Made in U.S.A. H15 6831" and "Wm. M. Nye Co. Inc. Bellevue, WA" I don't know whether it is worth commenting further on these, but if there are any dedicated Speed-X collectors amongst your readers they may wish to investigate this whole EIC business.


SPEED-X KEYS
H15 682
EIC
H15 682
EIC
WM. M. NYE CO. INC. BELLEVUE WA.
MADE IN USA H15 682
TOPS OF KEYS (LEVERS OMITTED)
LEVERS ARE STAMPED "SPEED-X"
BOTTOMS OF KEYS

MDW OCT. 1994

After perusing your #10, I took another look at my three McElroy keys and noted that two of them have the number and the insignia stamped on the bottom. The insignia is an arrow head, which makes me wonder if it is a military insignia, since a number of other keys that I know are military show some kind of arrow head.

Regarding Hi-Mound, I have a number of Hi-Mound hand keys which I have picked up over the years. They are well made, but I feel the J-37 and Bunnell standard telegraph key are much simpler in design and have a nicer feel. Some years ago I picked up a key at the Dayton Hamfest called the Compound Key model MHK-831 made by Hi-Mound together with its mating keyer. The MHK-831 is a combination paddle and hand key mounted on one base. When Hi-Mound designed the MHK-831, it looks like they decided to incorporate every possible adjustment into it. It is a bit over-engineered, but when I put on a display of keys at flea markets I usually include it and it gets a lot of attention. The distributor at Dayton said that it was too expensive and he didn't intend to import any more. I wrote to the company in Japan several times to see if they were still making them but never received a reply.

Murray enclosed a copy of a Hi-Mound flyer that shows several keys. It was interesting to note that they showed a BK-100 which appears to be identic to the Skillman "coffin" bug.

Tom Perera:

The key on the cover of Keyletter #10 is from the British WW I Fullerphone field telegraph/telephone set and the pivot is to allow the cover to close. I have one of these sets and it is nifty!

I've turned up some interesting keys lately. One is a McElroy model 600 Super Stream-speed in BLACK wrinkle finish. Another interesting key is a Kenwood bug. It was identified by Bill Holly who got one from Gil Schlehman quite a while ago. The main lever is split into upper and lower parts and the dashes are made when the lower part of the lever swivels to the left.

I also came across a Bunnell-Martin Flash key # 6. Bill Holly told me that he has a strong suspicion that this key with its single vertical pivot design was the precursor of the Rotoplex.

You might mention that my list of about 400 keys for trade is available to anyone for a SASE.

Tom, if you have any manuals or literature on the Fullerphone I would sure appreciate copies. I will give my firstborn [she eats a lot] for a picture. I am curious about the Kenwood bug as that is the first that I have heard about it. I assume that this is the same company that makes the radios, or could it be a "Ken-Pro"? I have a Ken-Pro straight key. Does anyone have any brochures or ads on either of these?

John Elwood:

Just saw a J-38 with it's original box. Here is a new manufacturer - - at least for me:

Signal Corps U.S. Army
Key J-38
File # 13945 - PHILA - 43
MADE BY
RADIO ESSENTIALS, INC
476 BROADWAY NEW YORK, N.Y.

It has a bakelite sub-base with all brass hardware except for a nickel plated base frame.

John also mentioned that the M-209 Cipher machine is shown in the Time-Life book The Secret War on page 91. He questioned my reference on the Vibroplex #4 Upright in Keyletter # 10. I will swear that I saw this term used in an early advertisement, but I have been unable to locate it. Has anyone else seen the "Vertical" referred to as a #4 Upright? If not, I have egg on my face! Oh well, if so, John is the only one that caught it.....

Pete Malvasi sent a packet message that he had located Sidney X. Shore. Shore is the "Sid, K2FC" mentioned in the El-Key ads. I called him in late October, and he provided information on the El-Key. The name "El-Key" was short for "Electronic Keyer". Approximately 400 were made between the years of 1956 and 1960. The design was based on a homebrewed set of paddles.

Shore and one other individual provided the financing and Poucel manufactured the keys. They were manufactured in Long Island, New York. I asked him about the notation in Keys, Keys, Keys [page 68, figure 6-9] that the El-Key was French made. Shore replied, "The closest that Poucel ever got to France was an atlas."

Lewis Cole:

> *I think that the key with the folding arm that you show on the first page is from a British "power buzzer." It appears to be the same as shown on page 20, Fig. 45, of Vol 8 of the AWA review. The arm was folded back to allow closure of the lid of the carrying case. These "Power buzzers" put out 80-100 volts of pulsating DC for use in "earth current" communication.*

F.A. Bartlett sent a copy of a Signal Sematic Key ad with the comment that it sounds like the mechanical equivalent of the Melehan Valiant key. The ad is out of a 1932 Radio Trading Company catalog and states:

> *"....Can be used as a double action or a semi-automatic key. Pressure on one side of the lever produces an even unbroken train of dots; on the other, the dashes. Code transmitted with this instrument is legible at much greater speeds, since the characters are perfectly formed.*

I had not noticed that before in their description. I think that it is all in the reading, but they are certainly not clear. The Melehan had two arms, one for dots and one for dashes. The Signal ad makes it sound like it automatically formed the dashes, but I don't think that was the case. I checked my ad copies and found an ad in a 1931 Wholesale Radio Service catalog that states:

> *"The Signal Sematic Key undoubtedly represents the highest development in "sending Keys." Scores of operators unable to develop speed with the ordinary key have greatly improved their rating with the use of the Signal Sematic. Eliminates the danger of "telegraphers paralysis." Of the latest design, it has a minimum of adjustments. Can be used as a double-action or semi-automatic key. Heavy black cast base with nickel-plated brass parts."*

I think that their point of reference here is the straight key. If you read the first ad carefully it leaves you in doubt about how the dashes are formed. Does anyone have a Sematic key or any good information on them? I particularly would like to know the purpose of the levers on each side of the key.

N7CFO NEW ACQUISITIONS:

Wyn Davies traded me a Mac Streamspeed for a J-5-A made by A. J. Ulmer. The label reads:

Signal Corps, U.S. Army
Flameproof key J-5-A
ORDER NO. 340-NY-40
MADE BY
A.J. ULMER NEW YORK, N.Y.

It is identical in all but very minor details to the Brach keys. I wrote Larry Nutting about it, and he replied that he had not previously heard of the manufacturer.

CLASSIFIED ADS:

WANTED: 26012 Key. Henry Engstrom.

WANTED: AWA Review volumes 1, 2, and 5, or copies of the key articles. Lynn Burlingame.

I would like to compile a list of collections that are available for viewing and a brief description of their contents. If your keys are available for display please let me know. I will include a listing of museums and restored depots that have telegraphy displays, so if you know of any please pass the information along.

I would also like to hear from readers on methods of displaying keys. I have three commercial display cases with glass shelves. I covered the bottom of the case with blue felt. It is inexpensive, cuts easily, and makes a nice contrast to the natural wood on key bases, sounders, etc. These cases are fine, but despite my best efforts to keep the doors closed, the shelves [both sides] get dusty and are real pain to clean.

I have thought about building wall cases with florescent lights and glass shelves. Plexiglass shelves with holes in them could be used to display "leg" keys. If anyone has plans for display shelves or cabinets, please pass them along.

I have been corresponding with S. Felton "Mitch" Mitchell, WA4OSR, the new owner of Vibroplex. Mitch is keenly interested in the early history of Vibroplex and wants to acquire early keys for a factory collection. We finally have an owner that is interested in preserving the history and legacy of telegraphy, so if you have any selling or trading stock give Mitch a call! He also wants to acquire parts lists for all of the old models, so if you have any, please send him copies. His address is:

Vibroplex
11 Midtown Park, E.
Mobile, AL 36606

Well, that is it for #11. If you want an updated index for the Keyletters please send me three units of first class postage and I will run a copy.

Take care, and happy collecting.

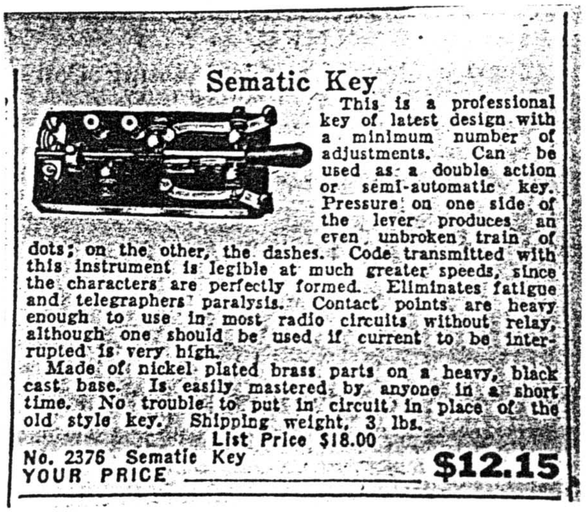
73,
Lynn
Lynn, N7CFO

N7CFO KEYLETTER #11

Lynn A. Burlingame
15621 SE 26th Street
Bellevue, WA 98008

(206)641-5488

The N7CFO KEYLETTER is a seldom regular publication devoted exclusively to sharing information about telegraphy instruments and the lore of another age.



Sematic Key

This is a professional key of latest design with a minimum number of adjustments. Can be used as a double action or semi-automatic key. Pressure on one side of the lever produces an even unbroken train of dots; on the other, the dashes. Code transmitted with this instrument is legible at much greater speeds, since the characters are perfectly formed. Eliminates fatigue and telegraphers' paralysis. Contact points are heavy enough to use in most radio circuits without relay, although one should be used if current to be interrupted is very high.

Made of nickel plated brass parts on a heavy, black cast base. Is easily mastered by anyone in a short time. No trouble to put in circuit in place of the old style key. Shipping weight, 3 lbs.

List Price $18.00

No. 2376 Sematic Key
YOUR PRICE **$12.15**